Mr. Arthur D. Watkins

Significant research in remote welding and metallurgical engineering

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Licensing information

For information on licensing INL technologies such as those developed by Mr. Watkins, contact the Lead Account Executive for Industrial Processing and Manufacturing:

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Education: Mr. Arthur D. Watkins holds a B.S. in metallurgical engineering from California Polytechnic State University and a M.S. in metallurgical engineering from the University of Idaho.

Work experience: Mr. Watkins has 29 years' experience in welding and metallurgy. He has been responsible for development and implementation of welding techniques and processes, selection of materials for corrosive environments, and metallurgical/corrosion failure analyses. He has been involved in modeling and controlling gas metal arc welding processes and in developing advanced weld vision systems for control uses. Also, Mr. Watkins has been involved in determining the in-process state of the fluxcored arc welding process by evaluating electrical signals and developing materials relationships between hardness and mechanical properties as a function of interstitial solute content in commercially pure titanium materials.

Professional endeavors: Mr. Watkins has concentrated efforts in developing techniques for remote welding and nondestructive examination of spent nuclear fuel casks, to inspect coiled tubing down-hole work in oil wells, and to control large furnaces. These techniques involve development of concurrent weld/NDE techniques to deposit and volumetrically inspect welds on a bead-bybead basis, to inspect coiled tubing for integrity, and for fuzzy logic control of largescale glass furnace hearths.

Patents:

U.S. Patent No. 4,825,038 – Method for Controlling Gas Metal Arc Welding

U.S. Patent No. 5,275,327 – Integrated Optical Sensor

U.S. Patent No. 5,906,757 – Liquid Plasma Deposition Method and Apparatus

U.S. Patent No. 6,473,708 -- Device and Method for Self-verifying Temperature Measurement and Control

U.S. Patent No. 6,563,303 -- Methods and Computer Executable Instructions for Marking a Downhole Elongate Line and Detecting Same